



REPUBLIC OF NAMIBIA

**MINISTRY OF AGRICULTURE, WATER AND FORESTRY**

**Tel:** (264) 61 2087512

**Fax:** (264) 61 2087779

Enquiries: Dr A. Bishi

[bishia@mawf.gov.na](mailto:bishia@mawf.gov.na)

Directorate of Veterinary Services

Government Office Park

Private Bag 12022

**Ausspännplatz, Windhoek**

12 July 2011

Ref: V13/3/2/7

**Circular V9/2011**

**TO:** All Deputy Chief Veterinary Officers  
All Chief Veterinarians  
All State Veterinarians  
All Control Animal Health Technicians  
All Chief Animal Health Technicians  
Animal Health Technicians  
All Farmers  
All Auctioneers  
All Food Business Operators  
NNFU, NAU

**RE: Brucellosis Melitensis Sampling Protocol and Maintenance of Free Status**

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**Background**

For a farm to qualify to supply sheep for export of lamb to the European Union one of the requirements is to be certified free of *Brucella melitensis* at the time of slaughter. In order to fulfill this requirement, a sample

based survey targeting **both sheep and goats** on the qualifying farm must be conducted annually following the protocol outlined below.

This Circular further outlines the procedures for the maintenance of the *Brucella melitensis* free status.

This circular replaces circulars No. V7/2005 and V13/2009.

## Methodology

### 1. Target Holdings

All farms supplying sheep for production of lamb destined to the European Union.

### 2. Target Species

Both sheep and goat populations on the farm must participate in the sample survey. A proportional representation of both species must be reflected in the samples allocated to each species group.

### 3. Target Group

Sampling shall be targeted primarily at adult breeding males (rams and bucks) followed by breeding females. To improve the sensitivity of detecting the disease, animals that had been known to have exhibited or exhibiting clinical signs consistent with Brucellosis (e.g. epididymitis, orchitis, abortion, retained placenta, infertility etc) must be targeted for sample collection.

The other small-stock categories (non breeding) must be excluded as they are less likely to be infected.

### 4. Sample Size

The minimum number of serum samples to be collected at each participating holding is 35.

If the holding has less than 35 animals, then all animals on the property must be sampled.

A stratified, systematic random sampling technique should be followed to obtain the test sample. This means all breeding males should be included up to the required sample size of 35. If however, there are fewer than 35 breeding males then the difference must be made up of breeding females, selected by systematic random sampling.

An example of Systematic random sampling procedure is as follows:

- a) Establish the number of animals in the group e.g. 6 breeding males and 290 breeding females
- b) Collect blood from all 6 males, leaving an additional 29 to be taken from the breeding females
- c) To calculate the selection interval, divide 290 by 29. This gives an answer of 10 indicating that you will select every 10<sup>th</sup> animal from the group when lined up in single file.
- d) The first animal to be bled is selected randomly by choosing a number between 1 and 10. Once this number is chosen the animal corresponding with the number in the line is bled. Every tenth animal thereafter will then be sampled until the total number of blood samples has been achieved.
- e) To randomly select a number between 1 and 10, write the numbers on pieces of paper of equal size. Place the papers in a container, shake it and ask someone else to draw one paper from the container.

The sample size is designed to detect at least one positive animal for the presence of *B. melitensis* antibodies (with 95% confidence) if the sero-prevalence is 10% in the target group.



It should be noted that if less than the required number of samples are collected that particular farm will not qualify for exports of lamb to the EU until the required sample size is attained.

### **1. Frequency and Validity Period of Test Results**

The flocks shall be tested on an annual basis ensuring that samples are collected and results obtained on or before the anniversary of the previous test result. If results are not obtained within this period, then the validity of the *B. melitensis* free status shall be suspended until the results are known.

### **2. Identification of Sampled Animals and Follow-up Procedure**

In order for facilitate follow-up testing in case of positive or doubtful laboratory results sampled animals must be identified by suitable marking ideally using ear-tag numbers. Where this is not possible other identification methods can be applied such as paint or an indelible ink mark (number) applied on the horn.

Any follow-up investigation of doubtful laboratory results (e.g. possible false positive results) must be done in consultation with the epidemiology section and the serology section of the Central Veterinary Laboratory on a case by case basis.

### **3. Interpretation of Lab Results, Declaration of Freedom and Follow-up Procedure**

Serum samples collected will be subjected to the Rose Bengal Test (for screening). RBT positive samples are confirmed positive or negative by the Compliment Fixation Test (CFT).

A flock shall be declared free of *B. melitensis* if one or more of the tested animals test positive to the laboratory testing procedure. If one or more sheep or goats react positively, the status of the *flock* officially free from brucellosis shall be suspended and may not be recovered unless the following requirements have been fulfilled:

- (a) All sheep and goats on the farm over 6 months of age have been tested and all positive animals are removed from the farm.
- (b) Thereafter, all sheep and goats above 6 months of age on the farm have tested negative for brucellosis on two consecutive tests conducted at least three months apart.

### **4. Sample Collection, Labeling Handling and Shipping**

Please ensure that serum is properly separated, labelled, packaged, stored and transported to the Central Veterinary Laboratory. Samples are to be accompanied to the laboratory by duly completed sampling questionnaires and herd health forms at all times. Refer to annexes 1, 2 and 5.

### **5. Quality Control**

- (a) State Veterinarians are expected to adequately explain the contents of this circular to staff involved in sample collection so that they fully understand all the instructions as explained above at least once a year.
- (b) State Veterinarians are also expected to train staff on correct animal handling and blood sampling and handling techniques and procedures.

- (c) State Veterinarians are further required to ensure that all requirements of this circular are met prior to dispatch of samples and submission forms to the laboratory, and to append their signature in annex 2 to confirm that this has been done. Forms must be completed in full at all times.
- (d) If the required number of samples is not received at the Central Veterinary Laboratory or forms are not completed in full, no testing shall be done until all the requirements are met.

## 6. Notification of Results

Each farmer shall be notified in writing of the test results immediately as they become available (specimen copies of the letter are in annex 3 of this circular). Farmers are to be advised to keep a closed herd system if they are to maintain freedom from B. melitensis. In accordance with the contents of the letter issued them.

The NamLITS Database will contain a verifiable list of farms certified as B. melitensis free and permits to be issued through the system will state the holding's status. Offices issuing permits for animals destined for the EU market will therefore have access to the information and no animals from non-compliant holdings shall be processed for that market.

## 7. Maintenance of Brucella Free Status

- (a) As explained above, all holdings declared free of B. melitensis free in terms of this circular will have the status "B. melitensis free" on the NamLITS data base (hereinafter referred to as free holdings) will be listed on the Nam LITS data base.
- (b) All livestock movement permits issued to remove sheep or goats from a free holding will bear the statement "B. melitensis Free Holding"
- (c) To continue the maintenance of this free status, all small stock entering a free holding must originate from a similarly free holding as listed on the NamLITS data base.
- (d) The data base will automatically remove, from the Brucella free list, any free holding that receives small stock from a holding with undetermined or positive B. melitensis status
- (e) The owner of a free holding must ensure that all livestock movement permits reflected on the Nam LITS database, issued to the free holding are accounted before a livestock movement permit to a European Union (EU) approved slaughterhouse can be issued.
  - a. Consequently, any free holding with unaccounted or expired livestock movement permits will automatically lose its free holding status.
- (f) Animal Health Technicians (AHT) must schedule several (with a minimum of at least one) ad hoc visits to free holdings during the twelve month period in which the free holding status remains valid. The AHT must inspect random batches of small stock to verify their residence on the holding and to ensure animal inventory records are updated and accurate. An animal health inspection form must be completed at such visits.
- (g) Owners of free holdings are expected to complete the **Residency Requirement Declaration (Annex 4)** attached, and to forward the completed declaration with the fully endorsed livestock movement permit to the EU approved export slaughter house.
- (h) Dedicated transport must be provided for small stock from free holdings to EU approved slaughter house. Furthermore collection of multiple loads should ensure that only loads from free holdings are collected by a specific truck/vehicle.



- (i) Food Business Operators (FBOs) are expected to receive the documents in 8 above and interrogate the NamLITS data base for accuracy before accepting the animals for slaughter to the EU market.

## 8. Brucella Free Auctions

This Circular further introduces the concept of B. melitensis free auctions, exhibitions and shows (hereinafter referred to as free auctions).

- (a) The Directorate of Veterinary Services will approve free auctions in line with circular V 4/2011
- (b) Auctioneers or any interested person should submit a written application to hold a free auction at least 2 weeks in advance with the local State Veterinary Office.
- (c) Only small stock from free holdings will be allowed to be delivered at a free auction.
- (d) The general public, including owners of free holdings may purchase small stock from a free auction and to remove animals to free holdings without compromising the free status.
- (e) The auction facility where a free auction is to be held should not have been used to hold or keep animals for a continuous period of 14 days prior to the auction date.
- (f) Contravention of any of the above conditions will result in the either the free auction or the free holding or both losing their free status.

Kindly ensure that the contents of this circular are communicated to all concerned.

  
Dr C. Bamhare  
Acting Chief Veterinary Officer



The last Circular was V8/2007 and dealt with the replacement of lost, damaged or faulty ear tags and was circulated to all offices.

Annexes:

**Annex 1: Brucella melitensis Serosurveillance in Sheep and Goats Questionnaire**

**DIRECTORATE OF VETERINARY SERVICES**

**(See notes overleaf before completion & sampling)**

SV District \_\_\_\_\_ Ref \_\_\_\_\_ Date \_\_\_\_\_

Place/Farm Name \_\_\_\_\_ Farm No. \_\_\_\_\_ 1<sup>st</sup> 4 Letters Magisterial District \_\_\_\_\_

Owner \_\_\_\_\_ Tel \_\_\_\_\_ Postaladdress \_\_\_\_\_

Veterinary Official \_\_\_\_\_

**LIVESTOCK POPULATION ON FARM**

Species	Number	Breeds
Sheep		
Goats		
Cattle		
Other		

**DETAILS OF FLOCK(S) SAMPLED**

***SHEEP***

Flock type \_\_\_\_\_

Breed(s) \_\_\_\_\_

Flock identification \_\_\_\_\_

No. of sheep	
No. of breeding females	
No. of rams	
No of samples collected	

***GOATS***

Flock type \_\_\_\_\_

Breed(s) \_\_\_\_\_

Flock identification \_\_\_\_\_

No. of Goats	
No. of breeding females	
No. of rams	
No. of samples collected	

HISTORY

Have any of the conditions listed below been diagnosed in sheep or goats on the farm in the last breeding season?

Condition	Yes (Tick✓)	No (Tick✓)	Don't Know (Tick✓)	Number of cases if known
Abortions				
Retained Placenta				
Orchitis/epididymitis				
Fertility problems				
Arthritis				
Other				

Brucellosis Vaccination History

Is routine vaccination practiced on the farm? (tick) Yes ☐ No ☐

If yes what was the last date of vaccination against *brucella ovis/b melitensis*? \_\_\_\_\_

Comments \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Annex 2: Details of Sampled Animals for *Brucella melitensis*

	Blood Tube No.	Animal Identity Number (if available)	Species (Goat/Sheep)	Category (Breeding male, Breeding female, Cull animal etc)	Age	Sex	Breed	Result (lab use only)
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
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35								



**Notes:**

- 1. To be completed by veterinary official each time when collecting sero-surveillance samples
- 2. This form should be completed for each flock separately
- 3. A minimum of 35 samples should be collected at each farm
- 4. Animals sampled should be identified (marked) for follow-up
- 5. Label the tubes legibly and ensure sample numbers correspond both on the form and tube.

\_\_\_\_\_  
**Name of Veterinary  
Official**

\_\_\_\_\_  
**Signature**

\_\_\_\_\_  
**Name of supervising  
Veterinarian**

\_\_\_\_\_  
**Signature**

Annex 3: Certificate of B. melitensis Freedom and Notification of Positive Laboratory Results  
NB. Below are two specimen copies of letters to be written to farmers informing them of B. melitensis lab results. The first one is for negative results and the second is for positive results respectively. These must be printed on a letterhead and signed and stamped by the State veterinarian.

Dear.....  
Farm Name.....  
Farm Number:.....  
Address:.....  
.....  
.....  
Date: .....

Certificate of B. Melitensis Freedom in Small Stock

This is to certify that blood samples collected from small stock at your farm on .....tested negative for Brucella melitensis. Meat derived from small stock on your farm therefore qualifies to be exported to the European Union. The negative test results are valid until..... You are required to have your small stock retested on or before..... to ensure continued access to the EU market.

In order to keep maintain B. melitensis free status you are therefore required to observe the following:

- (i) Maintain a closed flock. In other words you may not source animals from a farm, auction or any other source which is not certified free from the disease by the Directorate of Veterinary Services. Acquisition of animals from sources of unknown B melitensis status will invalidate the test results.
- (ii) Ensure your small stock must not come in contact with small stock of unknown B. melitensis status on the farm, during transportation or at any livestock gathering including auctions and exhibitions.
- (iii) For imported animals, you are advised to ensure that they are tested for B. melitensis in the country of origin with negative results in accordance with import health requirements. Upon arrival imported animals must be re-tested by your state veterinarian for B melitensis **before** they are introduced to the flock on your farm. Imported animals must therefore be separated from the rest of the flock until test results of are known. Should any animal test positive, it should be destroyed immediately under supervision of a veterinary official and the flock mates retested after 30 days. Animals testing negative shall only be introduced to the rest of the flock upon receipt of negative retest results.

Signed  
  
State Veterinarian

Farm Name.....  
Farm Number:.....  
Address:.....  
.....  
.....

Date: .....

Dear .....

**RE: Positive Laboratory test results for B. melitensis**

This is to inform you that blood samples collected from small stock at your farm on .....tested positive for **Brucella melitensis**. Meat derived from small stock on your farm therefore **does not** qualify to be exported to the European Union.

In order for your flock to regain B. melitensis freedom you are advised to contact your state veterinarian who will give you the necessary assistance.

Signed

State Veterinarian



Annex 4

**RESIDENCY REQUIREMENT DECLARATION**

I.....

declare that, I am the owner or the person responsible for the husbandry of the cattle/sheep in this consignment. I declare that the;

- cattle/sheep in this consignment were born and raised in the EU-approved FMD-free zone of Namibia and thus have remained for their whole life in this area (the area south of the veterinary cordon fence).
- cattle/sheep in this consignment have remained for at least 40 days at the holding above, from which they are being directly moved to the abattoir

I declare that this information is true and correct and also declare that I have read and understood this declaration.

.....  
**Date**

.....  
**Signature**

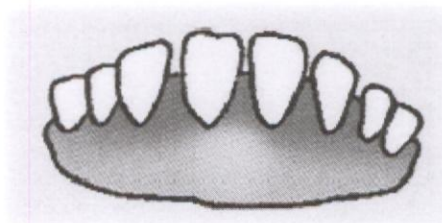
## Annex 5: Information on ageing of sheep and goats

### Aging of Sheep and Goats by appearance of the incisor teeth

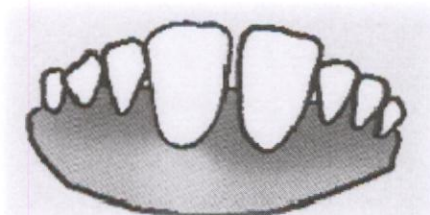
#### How to check the incisor teeth



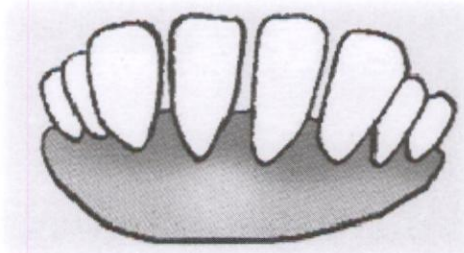
Milk teeth:  
less than 1 year  
all temporary teeth



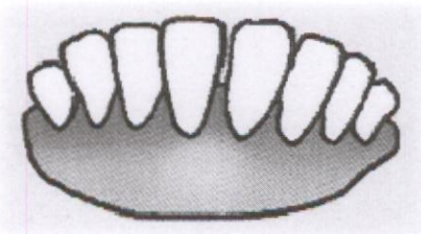
Two Tooth:  
about 1 to 1.5 years  
one pair of permanent incisors  
with remaining incisors still temporary



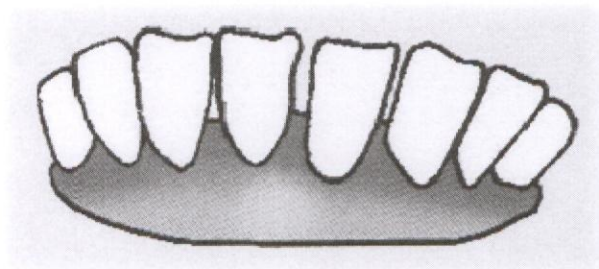
Four Tooth:  
about 1.5 to 2 years  
two pairs of permanent incisors



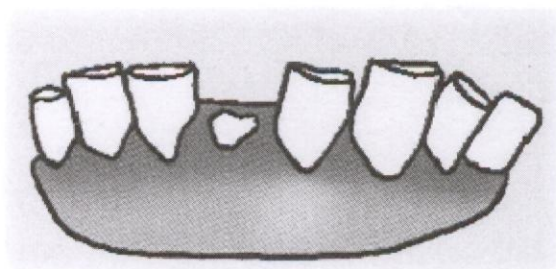
Six Tooth:  
about 2 to 3 years  
three pairs of permanent incisors



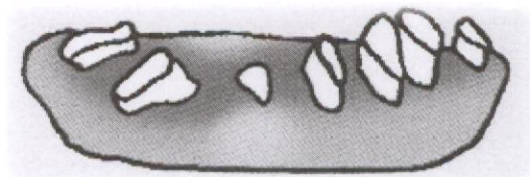
Eight Tooth or Full Mouth:  
about 3 to 4 years



Worn Mouth or Broken Mouth:  
about 4 years or more, depending  
on diet, environment and  
living conditions



Gummy:  
Aged



Source for illustrations:  
*Adapted from Vatta et al. (2005) Goatkeepers' Veterinary Manual.*